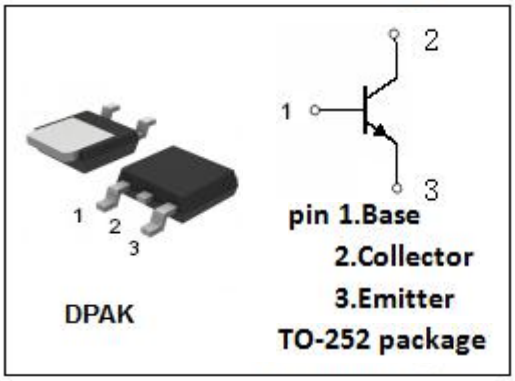
# isc Silicon NPN Power Transistor — MJD13003

## DESCRIPTION

- Collector–Emitter Sustaining Voltage
  : $V_{CEO(SUS)}$ = 400V(Min.)
- Collector Saturation Voltage
  : $V_{CE(sat)}$ = 1.0(Max) @ $I_C$= 1.0A

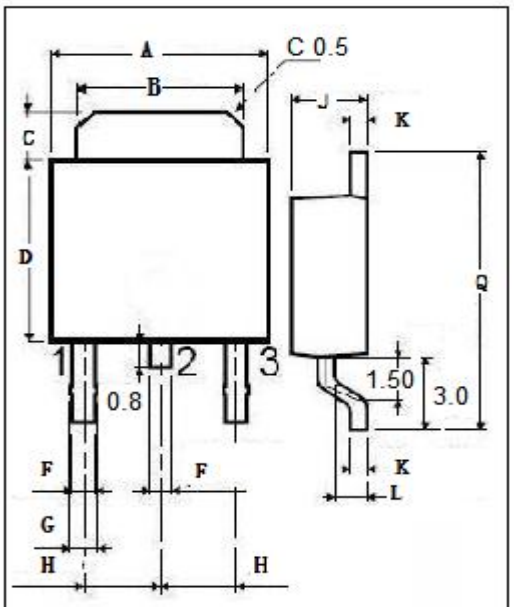
## APPLICATIONS

- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulators, inverters, DC-DC converter, Motor control, Solenoid/Relay drivers and deflection circuits.




## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector- Base Voltage | 700 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 400 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 9 | V |
| $I_C$ | Collector Current-Continuous | 1.5 | A |
| $I_{CM}$ | Collector Current-peak | 3.0 | A |
| $I_B$ | Base Current | 0.75 | A |
| $I_{BM}$ | Base Current-Peak | 1.5 | A |
| $P_D$ | Collector Power Dissipation $T_C$=25℃ | 25 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 6.40 | 6.60 |
| B | 5.20 | 5.40 |
| C | 1.15 | 1.35 |
| D | 5.70 | 6.10 |
| F | 0.65 | |
| G | 0.75 | |
| H | 2.10 | 2.50 |
| J | 2.10 | 2.40 |
| K | 0.40 | 0.60 |
| L | 0.90 | 1.10 |
| Q | 9.90 | 10.1 |



Download from alldatasheet.com

# isc Silicon NPN Power Transistor MJD13003

## ELECTRICAL CHARACTERISTICS

**$T_C$ =25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C$= 10mA; $I_B$= 0 | 400 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C$= 0.5 A ;$I_B$= 0.1A | | | 0.5 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C$= 1A ;$I_B$= 0.25 A<br>$T_C$= 100℃ | | | 1.0<br>1.0 | V |
| $V_{CE(sat)-3}$ | Collector-Emitter Saturation Voltage | $I_C$= 1.5A ;$I_B$= 0.5A | | | 3.0 | V |
| $V_{BE(sat)-1}$ | Base-Emitter Saturation Voltage | $I_C$= 0.5 A ;$I_B$= 0.1A | | | 1.0 | V |
| $V_{BE(sat)-2}$ | Base-Emitter Saturation Voltage | $I_C$= 1A ;$I_B$= 0.25 A<br>$T_C$= 100℃ | | | 1.2<br>1.1 | V |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CB}$= 400V;$I_E$= 0<br>$T_C$= 100℃ | | | 1<br>5 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 9V; $I_C$= 0 | | | 1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 0.5 A; $V_{CE}$= 5V | 14 | | 57 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 1A; $V_{CE}$= 5V | 5 | | 30 | |

**NOTICE：**

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.



Download from alldatasheet.com